



INDEPENDENT ENVIRONMENTAL MONITORING AGENCY

P.O. Box 1192, Yellowknife, NT X1A 2N8 • Phone (867) 669-9141 • Fax (867) 669-9145
Website: www.monitoringagency.net • Email: monitor1@yk.com

February 13, 2009

Violet Camsell-Blondin
Chairperson
Wek'eezhi Land and Water Board
Box 32
Wekweeti NT
X0E 1W0

**Re: Intervention on W2008L2-0001
Sable, Pigeon and Beartooth Water Licence Renewal**

Dear Ms. Camsell-Blondin

The Agency is pleased to submit the attached intervention for the scheduled public hearing on BHP Billiton's application W2008L2-0001 for renewal of the Sable, Pigeon and Beartooth water licence.

The Agency will be represented at the hearing by Laura Johnston, Tim Byers and Kevin O'Reilly. We anticipate that it will take approximately 20-30 minutes to make a presentation of our intervention and we would be pleased to answer any questions you or other parties may have.

Should you have any questions regarding our intervention, please feel free to contact our Manager, Kevin O'Reilly, at our office in Yellowknife.

Sincerely,

Bill Ross
Chairperson

cc. Agency Society Members
Bruce Hanna, Fisheries and Oceans
Anne Wilson, Environment Canada





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W2008L2-0001

Sable, Pigeon and Beartooth Water Licence Renewal

Independent Environmental Monitoring Agency's

Presentation to the

Wek'eezhii Land and Water Board

held at Behchoko (Rae-Edzo), NT

March 4 & 5, 2009



Thank you for the opportunity to present the Independent Environmental Monitoring Agency's views regarding BHP Billiton's request for renewal of the Sable Pigeon Beartooth Water Licence. The Agency would also like to thank BHP Billiton for the additional information provided both in written form and through the technical workshops hosted by the Board on November 4 & 5, 2008 and the company sponsored meeting of January 26, 2009.

The Agency's main concerns are with the proposals for changes to some of the Effluent Quality Criteria (EQC). As part of the company's response to the information request of November 7, 2008, BHP Billiton provided the document "Review of Effluent Quality Criteria (EQC) for the Sable Site. In this document, the company identified 22 candidate parameters for discussion. The company proposed leaving criteria for 15 parameters unchanged; to delete criteria for four parameters; to change the criteria for two parameters; and to develop a site-specific criterion for nickel. The parameters to be deleted from consideration were chloride, molybdenum, selenium, and nitrate. The licenced parameters to be changed were ammonia and zinc. The Agency is of the view that the rationales for deleting the criteria for molybdenum and selenium are reasonable. However, some form of monitoring is required to confirm the predictions made and further discussion of the deleted parameters will need to be dealt with in the Watershed Adaptive Management Plan approval process. The principal changes of concern to the Agency are those proposed for: nickel, chloride, and nitrate.

There is also a concern with the lack of criteria for Biochemical Oxygen Demand. In addition, the Agency recommends additional monitoring requirements for inclusion in the licence.

Nickel: BHP Billiton is proposing to develop a criterion for nickel after the issuance of a new licence, once additional technical information is available. Given the current lack of information, the Agency is not opposed to this approach, although it would have preferred to deal with this issue as part of the current licencing process. The Agency would like to ensure that the work is carried out in a timely manner. BHP Billiton has proposed a clause in the draft licence that would require submission of the nickel study within 18 months of the licence issuance (Part I, s.3). The **Agency recommends** that a condition requiring that the proposed value for nickel be submitted a minimum of 12 months prior to any discharge from the Two-Rock Sedimentation Pond also be included in the licence. This should allow adequate time for all parties to review and comment on the submission prior to the Board approving the incorporation of an Effluent Quality Criteria for Nickel into the licence.

Chloride: BHP Billiton proposes dropping the study clause that requires the development of a criterion for chloride as chloride is not perceived to be an issue at Sable, Pigeon or Beartooth pits as all will be situated within the permafrost layer. The Agency does not see this as a problem with regard to the three pits under consideration, provided that monitoring is undertaken to ensure that these predictions are correct. However, the Agency is unsure how the work completed to

date will be applied to the mine site as a whole if the legal requirement for a chloride criterion is dropped from any new licence. The Agency is of the view that an Environmental Quality Objective for chloride is required for the entire mine site. Based on such an Objective, site specific Effluent Quality Criteria could be established for the Long Lake Containment Facility and other areas as required. Since the two licences are being combined, this makes more sense. The Agency understands BHP Billiton has suggested that such development could be accomplished as part of the Watershed Adaptive Management Plan. The **Agency recommends** that the Board provide written direction to BHP Billiton requiring development of a site wide Water Quality Objective and site specific Effluent Quality Criteria for chloride discharges from the Long Lake Containment Facility and any other water bodies where the Objective may be exceeded. This work could be included in the updated Watershed Adaptive Management Plan, preferably within one year, and may subsequently lead to an effluent quality criterion for chloride in the water licence.

Nitrate: BHP Billiton has not proposed an Effluent Quality Criterion for nitrate. The Company's model suggests that nitrate would be below 4.5 mg/L within 20 m of the outflow pipe into Horseshoe Lake. Furthermore, the Company anticipates lower concentrations of nitrates at Two-Rock Lake relative to the concentrations at the Long Lake Containment Facility. In order to assess accuracy of these predictions, the **Agency recommends** that a requirement for monitoring be included in the Surveillance Network Program and the Aquatic Effects Monitoring Program. Nitrate should also be addressed in the updated Watershed Adaptive Management Plan.

Biochemical Oxygen Demand: The Agency notes that in the main licence there is a requirement for the Maximum Average Concentration for Biochemical Oxygen Demand to remain below 40.0 mg/L. The **Agency recommends** that a similar requirement for the discharge into Horseshoe Lake be included in the Sable Pigeon Beartooth section of the new licence. BHP Billiton has indicated (pg. 2-2 of its response to the information request) that this criterion could be reasonably met.

One last comment before leaving the subject of Effluent Quality Criteria. The assessment of the proposed criteria was made more difficult by the lack of information for some parameters. The Agency found the "Review of Effluent Quality Criteria (EQC) for the Sable Pit" to be a very useful document. In addition, the discussion paper "Toward the Development of Northern Water Quality Standards: Review and Evaluation of Approaches for Managing water Use in Northern Canada" prepared for the Department of Indian and Northern Affairs also contributed to the Agency's understanding of the possible approaches to setting standards. The **Agency encourages** both Indian and Northern Affairs and the Boards to complete this valuable work as quickly as possible, in consultation with other affected parties

Monitoring: BHP Billiton has made predictions concerning chloride, nitrate, molybdenum, and selenium concentrations in the Two Rock Sedimentation Pond system. In order to verify these predictions, the **Agency recommends** that the Board include a requirement to monitor these variables as part of the Aquatic Effects

Monitoring Program and/or Surveillance Network Program. A range of numerical thresholds and triggers in the Watershed Adaptive Management Plan to deal with any measured deviations from these predictions should also be provided.

The six other areas of concern to the Agency that I would like to address briefly:

Pigeon Diversion Channel: The proposed removal of the clause (Part F. 12.) requiring fish passage, habitat, etc. in the Pigeon Diversion Channel is unacceptable to the Agency. The Agency notes that in the draft ICRP (pg. 5-154) that the Pigeon Channel will be designed “to maintain drainage and to allow for the seasonal passage of fish during the period of mine operations (BHP and DiaMet, 2000). BHP Billiton will use the experience gained from developing the Panda Diversion Channel and will work closely with DFO to ensure that [it is] satisfied with the proposed enhancement features.” At a minimum, the **Agency recommends** that BHP Billiton be required to create a channel that is safely passable for fish to and from Fay Lake.

Air Quality Monitoring: In the Agency’s view the proposed elimination of this clause from the Surveillance Network Program (D. 6) is unacceptable. An understanding of the chemical elements contained in/ carried with the air is crucial to understanding the aquatic chemistry at the site, especially for lakes within dust deposition zones. Without this information, assessing the impact of the project on the environment will be difficult, if not impossible. The **Agency recommends** that, at a minimum, the original clause on air quality monitoring be left in place.

Use of Beartooth Pit: The Agency is not opposed in principle to the use of Beartooth Pit for minewater storage. The use of Beartooth Pit for minewater storage, is the subject of an ongoing amendment process for the Wastewater and Processed Kimberlite Management A decision regarding the use of the Pit should not be made until there is a thorough review of the trade-offs and lost opportunities for the preferred use, as suggested in our letter of January 27, 2009. If the information to address the concerns is not available prior to the hearing, the **Agency recommends** that a clause be included in the licence to require BHP Billiton to provide the necessary analysis prior to the Board making a decision on the future use of the Beartooth Pit.

Timelines for Document Review: BHP Billiton’s original proposal to set review periods at 30 days has been revised to 45 days in many cases. In most instances, 45 days should be adequate, if tight. However, given the importance of the Waste Rock and Ore Storage Management Plan, the **Agency recommends** that 60 days be allocated for any reviews of this plan.

Cumulative Effects: The Agency is of the view that the wording suggested by BHP Billiton does not adequately reflect the need for the Company to measure and understand its contribution to cumulative effects in the area. We acknowledge that cumulative effects are a shared responsibility. But we also believe that BHPB has a responsibility to monitor the effects it causes, even if others also contribute to the same effects. The **Agency recommends** that the original wording be retained.

Alternately, the Agency suggests that the following wording be incorporated: ‘an evaluation of the Ekati mine’s contribution to cumulative effects in the region’.

Receiving Environment: The Agency acknowledges the additional rationale provided by BHP Billiton on February 10, 2009. However, the Agency is still of the view that the definition in the current Sable, Pigeon Beartooth licence is preferable. This definition would be consistent with the definition of environment found in the Mackenzie Valley Resource Management Act which reads in part: ‘.. means the components of the Earth and includes (a) land, water and air, including all layers of the atmosphere;...’. In addition, given the definition of waters in the Northwest Territories Waters Act (means any inland water, whether in a liquid or frozen state, on or below the surface of the land in the Northwest Territories) it is difficult to see how the terrestrial component can be separated from the aquatic component. If the concern with the inclusion of terrestrial is the potential to capture any ‘indirect release of water from the road after watering’, this could be dealt with by amending Part G of the licence. The **Agency recommends** that the definition of receiving environment remain unchanged and include the terrestrial component. In addition, the **Agency recommends** that Part G, Item 11 (d) be amended to read “All Discharges (with the exception of runoff from watered roads) by the Licensee from the Project shall meet the following effluent quality requirements:”

In summary, the Independent Environmental Monitoring Agency’s main concerns are with some of the changes to the Effluent Quality Criteria as proposed by BHP Billiton. The principal chemicals of concern to the Agency are: nickel, chloride, and nitrate.

There is also a concern with the lack of criteria for Biochemical Oxygen Demand. The Agency has also recommended the inclusion of additional monitoring requirements.

In addition, the Agency has concerns with six other changes proposed by BHP Billiton relating to the following areas:

- Pigeon Diversion channel
- Air Quality Monitoring
- Beartooth Pit
- Review of Documents
- Cumulative Effects
- Receiving Environment

In closing, the Agency would like to thank the Wek’eezhii Land and Water Board for the opportunity to present our concerns and recommendations.